What is claimed is:

1. A method of refurbishing a deposition target, the method comprising:

(a) providing a surface of the target in a process zone;

(b) generating an electrical arc in the process zone;

(c) inserting a consumable metal wire into the process zone to form liquefied metal; and

(d) injecting a pressurized gas into the process zone to direct the liquefied metal toward the surface of the target to splatter the liquefied metal on the surface, thereby forming a coating comprising the metal on at least a portion of the surface of the target that exhibits reduced contamination from the environment.

2. A method according to claim 1 wherein the surface of the target comprises a sputtered depression, and wherein (d) comprises directing the liquefied metal into the sputtered depression of the target to at least partially fill the sputtered depression with the liquefied metal.

3. A method according to claim 1 wherein (b) and (c) are performed simultaneously and comprise the step of generating an electrical arc between first and second electrodes, wherein at least one of the first or second electrodes comprises the consumable metal wire.

4. A method according to claim 1 wherein (b) comprises generating an electrical arc between an electrode and the surface of the target.

5. A method according to claim 1 wherein the coating comprises at least one of titanium, aluminum, tungsten, tantalum, copper.

6. A method according to claim 1 wherein the coating comprises at least one of germanium, selenium and tellurium.

7. A method according to claim 1 wherein the coating comprises a plurality of metals.

8. A method according to claim 7 wherein the coating comprises aluminum and at least one of (i) from about 0.25% to about 20% by weight of copper, and (ii) from about 0.25% to about 20% by weight of silicon.

9. A method according to claim 8 wherein (c) comprises inserting a consumable metal wire comprising an aluminum alloy into the process zone.

10. A method according to claim 7 wherein the coating comprises a chalcogenide material comprising germanium, selenium and tellurium.

11. A method according to claim 10 wherein (c) comprises inserting a consumable metal wire comprising a chalcogenide alloy into the process zone.

12. A method according to claim 1 wherein (d) comprises directing liquefied metal onto a portion of the surface of the target to form a metal layer on the surface, and wherein (d) is repeated to form a plurality of metal layers on the surface.

13. A method according to claim 12 further comprising exposing the layers to an energy source to interdiffuse the metal layers.

14. A method according to claim 13 wherein the layers are heated to a temperature of from about 50°C to about 3000°C.

15. A method according to claim 12 wherein the plurality of metal layers comprises at least one aluminum layer and at least one copper layer, and wherein the aluminum and copper layers are heated to form an interdiffused layer comprising from about 0.25% to about 20% by weight of copper.

16. A method according to claim 12 wherein the plurality of metal layers comprises at least one layer having a chalcogen metal, and wherein the plurality of layers are heated to form an interdiffused layer comprising a chalcogenide material.

17. A method according to claim 16 wherein the chalcogenide material comprises germanium, selenium and tellurium.

18. A method according to claim 1 further comprising:

(e) exposing the surface the target to an energy source to recrystallize the metal on the surface.

19. A method according to claim 18 wherein (e) comprises heating the surface to a temperature of from about 50°C to about 3000°C.

20. A method according to claim 18 wherein (e) comprises directing an electromagnetic energy beam onto the surface to recrystallize the metal.

21. A method according to claim 18 further comprising:

(f) machining the surface of the target to provide a predetermined target thickness.

22. A method according to claim 21 further comprising cleaning the surface of the target to remove machining residues.

23. A method according to claim 22 comprising cleaning the surface with a cleaning solvent.

24. A method of refurbishing a deposition target, the method comprising:

(a) providing a surface of the target in a process zone;

(b) generating an electrical arc in the process zone between first and second electrodes by applying a voltage to the electrodes, at least one of the first and second electrodes comprising a consumable metal wire, thereby at least partially liquefying the consumable metal wire to form liquefied metal; and

(c) injecting a pressurized gas into the process zone to direct the liquefied metal toward the surface of the target to splatter the liquefied metal on the surface, thereby forming a coating comprising the metal on at least a portion of the surface of the target that exhibits reduced contamination from the environment.

25. A method according to claim 24 wherein the surface comprises a sputtered depression, and wherein (c) comprises directing the liquefied metal into the sputtered depression of the target to at least partially fill the sputtered depression with the liquefied metal.

26. A method according to claim 24 wherein the consumable metal wire comprises at least one of titanium, aluminum, tungsten, tantalum and copper.

27. A method according to claim 24 wherein the consumable metal wire comprises at least one of germanium, selenium and tellurium.

28. A method of refurbishing a deposition target, the method comprising:

(a) providing a surface of the target in a process zone;

(b) generating an electrical arc in the process zone between the surface of the target and a consumable metal wire by applying a voltage to the target and the consumable metal wire, thereby at least partially liquefying the consumable metal wire in the process zone to form a liquefied metal; and

(c) injecting a pressurized gas into the process zone to direct the liquefied metal toward the surface of the target to splatter the liquefied metal on the surface thereby forming a coating comprising the metal on at least a portion of the surface of the target that exhibits reduced contamination from the environment.

29. A method according to claim 28 wherein the surface comprises a sputtered depression, and wherein (c) comprises directing the liquefied metal into the sputtered depression of the target to at least partially fill the sputtered depression with the liquefied metal.

30. A method according to claim 28 wherein the consumable metal wire comprises at least one of titanium, aluminum, tungsten, tantalum and copper.

31. A method according to claim 28 wherein the consumable metal wire comprises at least one of germanium, selenium and tellurium.

32. A method of refurbishing a deposition target, the method comprising:

(a) providing a surface of the deposition target in a process zone;

(b) generating an electrical arc in the process zone between the surface of the target and an electrode by applying a voltage to the target and the electrode;

(c) inserting a consumable metal wire into the process zone to at least partially liquefy the consumable metal wire in the process zone to form liquefied metal; and

(d) injecting a pressurized gas into the process zone to direct the liquefied metal toward the surface of the target to splatter the liquefied metal on the surface, thereby forming a coating comprising the metal on at least a portion of the surface of the target that exhibits reduced contamination from the environment.

33. A method according to claim 32 wherein the surface comprises a sputtered depression, and wherein (d) comprises directing the liquefied metal into the sputtered depression of the target to at least partially fill the sputtered depression with the liquefied metal.

34. A method according to claim 32 wherein the consumable metal wire comprises at least one of titanium, aluminum, tungsten, tantalum and copper.

35. A method according to claim 32 wherein the consumable metal wire comprises at least one of germanium, selenium and tellurium.

36. A method of refurbishing a deposition target, the method comprising:

(a) providing a surface of the deposition target in a process zone;

(b) generating an electrical arc in the process zone between the surface of the sputtering target and an electrode by applying a voltage to the target and the electrode;

(c) passing the electrical arc through a nozzle to form a plasma jet in the process zone;

(d) inserting a consumable metal wire into the process zone to at least partially liquefy the consumable metal wire in the process zone to form liquefied metal that is directed onto the surface of the sputtering target by the plasma jet to splatter the surface with the liquefied metal, thereby forming a coating comprising the metal on at least a portion of the surface of the target; and

(e) injecting a pressurized gas into the process zone to reduce contamination of the liquefied metal from the environment.

37. A method according to claim 36 wherein the surface comprises a sputtered depression, and wherein (d) comprises directing the liquefied metal into the sputtered depression of the target to at least partially fill the sputtered depression with the liquefied metal.

38. A method according to claim 36 wherein the consumable metal wire comprises at least one of titanium, aluminum, tungsten, tantalum and copper.

39. A method according to claim 36 wherein the consumable metal wire comprises at least one of germanium, selenium and tellurium.

40. A method according to claim 36 wherein the electrode comprises the consumable metal wire.

41. A method of refurbishing a deposition target, the method comprising:

(a) providing a surface of the deposition target in a process zone;

(b) injecting a pressurized gas into the process zone;

(c) igniting the pressurized gas to combust the pressurized gas; and

(d) inserting a consumable metal wire into the process zone to at least partially liquefy the consumable metal wire to form liquefied metal that is directed onto the surface of the target by the pressurized gas to splatter the surface of the target with the liquefied metal, thereby forming a coating comprising the metal on at least a portion of the surface of the target.

42. A method according to claim 41 wherein the consumable metal wire comprises at least one of titanium, aluminum, tungsten, tantalum and copper.

43. A method according to claim 341 wherein the consumable metal wire comprises at least one of germanium, selenium and tellurium.

44. A method of refurbishing a deposition target, the method comprising:

(a) placing a metal-containing body on at least a portion of a surface of the target;

(b) applying a pressure that presses the metal-containing body against the surface; and

(c) passing an electrical current though the metal-containing body and the surface of the target to at least partially melt and fuse the metal-containing body to the portion of the surface of the target.

45. A method according to claim 44 wherein the metal-containing body comprises at least one of titanium, aluminum, tungsten, tantalum and copper.

46. A method according to claim 44 wherein the metal-containing body comprises at least one of germanium, selenium and tellurium.

47. A method of refurbishing a deposition target, the method comprising:

(a) contacting a surface of a metal-containing body with at least a portion of a surface of the target; and

(b) rubbing the surface of the metal-containing body against the surface of the target to generate a frictional force between the surfaces that heats and at least partially melts the metal-containing body to fuse the metal-containing body to the surface of the target.

48. A method according to claim 47 wherein the metal-containing body comprises at least one of titanium, aluminum, tungsten, tantalum and copper.

49. A method according to claim 47 wherein the metal-containing body comprises at least one of germanium, selenium and tellurium.